**Cellular Respiration**

* Where do organisms obtain their energy from to make ATP?  
  Organisms obtain the energy for ATP production through cellular respiration, a process controlled by enzymes.
* What is the key difference between aerobic and anaerobic respiration?  
  Aerobic and anaerobic respiration are the two types of cellular respiration and occur in differing circumstances. While aerobic respiration occurs in the presence of oxygen, anaerobic respiration occurs in the absence of oxygen.

**Glycolysis**

* Where does glycolysis occur?  
  Glycolysis, the initial stage in the breakdown of glucose, occurs in the cytoplasm (with or without the presence of oxygen).
* The net outcome for glycolysis is 2 pyruvate, 2-4 ATP, 2 NADH

**Krebs Cycle**

* Where does the Krebs cycle occur?  
  The Krebs cycle (occurring after glycolysis if oxygen is available) takes place in the mitochondrial matrix
* The net outcome for the Krebs cycle is 2 ATP, 10 NADH, 4 FADH2
* By products produced by the Krebs cycle are carbon dioxide and hydrogen.

**Electron Transport Chain**

* Where does electron transport occur?  
  The electron transport chain, in which hydrogen acceptor molecules give up hydrogen atoms to combine with oxygen and form water, takes place in the mitochondrial cristae.
* What is the role of oxygen in ETC?  
  Oxygen is what the hydrogen acceptor molecules combine with after giving up their hydrogen atoms, allowing the formation of water.
* The net outcome for electron transport is 32 ATP

**Anaerobic Respiration**

* What are the end products of anaerobic respiration?  
  All organisms can metabolise glucose anaerobically (without oxygen) using glycolysis in the cytoplasm. Fermentation pathways for glucose metabolism do not use oxygen as a final electron acceptor. The energy yield from fermentation is low, and few organisms can obtain sufficient energy for their needs this way. During lactic acid fermentation the electron acceptor is pyruvate itself, and the end product is lactic acid. In alcoholic fermentation, the electron acceptor is ethanal, which is in turn converted to ethanol.

Glucose + oxygen -> Carbon dioxide + water + energy